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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,705	08/22/2001	Yukio Michishita	251768/00	6227

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EXAMINER	
BELLO, AGUSTIN	
ART UNIT	**PAPER NUMBER**
2633	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,705	MICHISHITA, YUKIO	
	Examiner	Art Unit	
	Agustin Bello	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/13/01 & 8/22/01.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 11-19, and 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoneyama (U.S. Patent No. 5,923,453).

Regarding claims 1, 13, and 23, Yoneyama teaches an optical transmission path monitoring system for monitoring optical transmission paths by wavelength-division multiplexing probe lights with signal lights of a wavelength division multiplexing optical transmission system provided with: a first monitoring probe light (reference numeral 30, LDa in Figure 8) and a second monitoring probe light (reference numeral 30, LDm in Figure 8). Yoneyama differs from the claimed invention in that Yoneyama fails to specifically teach that the first monitoring probe light is an optical fiber monitoring probe light for monitoring optical fibers which constitute some parts of said optical transmission paths and that the second monitoring probe light is an optical amplifier-repeater monitoring probe light for monitoring optical amplifier-repeaters which constitute other parts of said optical transmission paths. However, Yoneyama suggests as much in teaching that the first and second probe lights in general monitor optical fiber transmission line properties (column 7 lines 9-31). One skilled in the art would clearly have recognized that the first and second probe lights taught by Yoneyama could have been used to monitor the optical fibers and the optical amplifier-repeaters of the

system, respectively. In other words, the "property other than the signal light" disclosed by Yoneyama could have included the properties of both the optical fiber and the optical amplifier-repeaters of the system. One skilled in the art would have been motivated to do so in order to monitor properties of the system specifically related to the fiber of the system and likewise the optical amplifier-repeaters of the system, thereby giving a more thorough picture of the system properties. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use the plurality of monitoring probe lights taught by Yoneyama to monitor both the optical fiber of the system and the optical amplifier-repeaters of the system.

Regarding claims 2, 3, 14, 15, 24, and 25, Yoneyama differs from the claimed invention in that Yoneyama fails to specifically teach selecting the wavelengths of the first and second monitoring probe lights in order to achieve a positive or negative wavelength dispersion of group delays over the full length of the optical transmission path or selecting the wavelengths of the first and second monitoring probe lights so that they fall on the longer or shorter side of the zero dispersion wavelength. However, it would have been well within the realm of knowledge of one skilled in the art to select any desirable wavelength for the first and second monitoring probe lights taught by Yoneyama including wavelengths that achieve a positive or negative wavelength dispersion of group delays over the full length of the optical transmission path or wavelengths that fall on the longer or shorter side of the zero dispersion wavelength. One skilled in the art would have been motivated to select such wavelengths in order to improve signal quality by reducing the overall dispersion of the system. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to select any desirable wavelength for the first and second monitoring probe lights taught by Yoneyama including wavelengths that achieve

a positive or negative wavelength dispersion of group delays over the full length of the optical transmission path or wavelengths that fall on the longer or shorter side of the zero dispersion wavelength.

Regarding claims 4, 16, and 26, Yoneyama teaches that said wavelength division multiplexing optical transmission system has two-core two-way optical transmission paths (e.g. "UP" "DOWN" paths shown in Figure 3), and is provided with a total of four probe lights (e.g. Lda-LDd in Figure 8) including said optical fiber monitoring probe light and said optical amplifier-repeater monitoring probe light delivering to each of the two outward optical transmission paths which said two-core two-way optical transmission paths have, and every one of said four probe lights has a different wavelength from others (e.g. λa-λd) in Figure 8.

Regarding claims 5, 12, and 27 Yoneyama teaches probe light generating means (reference numeral 30 in Figure 8) for generating said optical fiber monitoring probe lights and optical amplifier-repeater monitoring probe lights, multiplexing means (reference numeral 7 in Figure 8) for multiplexing said probe lights with signal lights and delivering the multiplexed lights to said outward optical transmission path (reference numeral 3 in Figure 8), loop back means (reference numeral 12 in Figure 3) for branching reflected light components generating from said probe lights from said outward optical transmission path and coupling the branched lights with signal lights on said inward optical transmission path, and optical detecting means (reference numeral 17 in Figure 3) detecting said light components transmitted by said loop back means and outputted from said inward optical transmission path, said optical transmission paths are monitored on the basis of the output of said optical detecting means (e.g. via reference numeral 17 in Figure 3).

Regarding claims 6, 7, 17, 18, 28, and 29, Yoneyama differs from the claimed invention in that Yoneyama fails to specifically teach a coherent homodyne light detection system wherein light partially branched from said optical fiber monitoring probe light is used as local oscillating light. However, coherent homodyne detection systems such as that claimed by the applicant are very well known in the art. One skilled in the art would have been motivated to use a coherent light detection system wherein light partially branched from said optical fiber monitoring probe light is used as a local oscillating light in order to detect a difference between the received optical fiber monitoring probe light and the optical monitoring probe light emitted into the system, thereby allowing a measure of system parameters. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a coherent homodyne light detection system wherein light partially branched from said optical fiber monitoring probe light is used as local oscillating light.

Regarding claims 8, 19, and 30 Yoneyama appears to teach said optical detecting means optically detects by a direct light detecting system (reference numeral 17 in Figure 3) said light components transmitted by said loop back means and outputted from said inward optical transmission path.

Regarding claims 11, 22, and 31, Yoneyama differs from the claimed invention in that Yoneyama fails to specifically teach means for alternatively selecting said optical fiber monitoring probe lights and optical amplifier-repeater monitoring probe lights for supply said outward optical transmission path, and monitoring the optical fibers and the optical amplifier-repeaters on a time-division basis. However, time division multiplexing of optical signals is well known in the art and would have been obvious to one skilled in the art at the time the invention

was made. One skilled in the art would have been motivated to incorporate time division multiplexing in to the system of Yoneyama in order to limit the amount of by occupied by the monitoring signals.

3. Claims 9-10 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoneyama in view of Homsey (U.S. Patent No. 6,708,004).

Regarding claims 9-10 and 20-21, Yoneyama differs from the claimed invention in that Yoneyama fails to specifically teach the use of 2x2 optical couplers with light reflecting means. However, Homsey in the same field of bi-directional optical communication, teaches it is well known in the art to use 2x2 optical couplers with light reflecting means (reference numeral 41, 43, 46, 47, 48 in Figure 1) in the loop-back portion between two fibers. One skilled in the art would have been motivated to use 2x2 optical couplers with light reflecting means in the system of Yoneyama in order to specifically select the desired monitoring signals while passing all other signals. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include the use of 2x2 optical couplers with light reflecting means in the system of Yoneyama.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello
Examiner
Art Unit 2633

AB